

**Four antiviral drugs are licensed for treatment and chemoprophylaxis**

- Antivirals shorten the course of illness when given within the first 1-2 days of influenza symptoms
- Avoid antivirals in pregnant women unless benefit outweighs risk
- Though usually effective for influenza A, this season amantadine and rimantadine are not recommended in the U.S. due to high levels of resistance

	<b>Amantadine</b> (Symmetrel®)	<b>Rimantadine</b> (Flumadine®)	<b>Oseltamivir</b> (Tamiflu®)	<b>Zanamivir</b> (Relenza®)
<b>Effective for Flu A</b>	<b>Not recommended for 2005-2006 season</b>		<b>Yes</b>	<b>Yes</b>
<b>Effective for Flu B</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>
<b>Mode</b>	<b>Oral</b>	<b>Oral</b>	<b>Oral</b>	<b>Inhaled</b>
<b>Treatment</b>	<b>≥ 1 y.o.</b>	<b>≥ 13 y.o.</b>	<b>≥ 1 y.o.</b>	<b>≥ 7 y.o.</b>
<b>Prophylaxis</b>	<b>≥ 1 y.o.</b>	<b>≥ 1 y.o.</b>	<b>≥ 1 y.o.</b>	<b>N/A</b>

**Priority groups for treatment with antiviral medicines**

- Any person with a potentially life-threatening influenza-related illness
- Any person at high risk for serious complications of influenza and who is within the first 2 days of illness onset

**Priority groups for chemoprophylaxis with antiviral medicines**

- All residents and workers during an institutional outbreak
- All persons at high risk of serious influenza complications if they are exposed to a known or suspected case of influenza

**Consider antiviral use in these patients if local supplies are adequate:**

**Chemoprophylaxis**

- Persons in communities where influenza viruses are circulating (influenza outbreak usually lasts 6-8 weeks)
- Persons at high risk of serious complications who cannot get vaccinated. Persons at high risk of serious complications who have been vaccinated but have not had time to mount an immune response to the vaccine. In adults, chemoprophylaxis should occur for 2 weeks after vaccination.
- Persons with immunosuppressive conditions who are not expected to mount an adequate antibody response to influenza vaccine.
- Health-care workers with direct patient care responsibilities who have not been vaccinated

**Treatment**

- Infected adults and children aged ≥1 year who do not have conditions placing them at high risk for serious complications secondary to influenza infection.

**Length of Antiviral Treatment and Chemoprophylaxis**

	<b>Treatment Length</b>	<b>Chemoprophylaxis Length</b>		
		<b>After exposure</b>	<b>Institutional outbreak</b>	<b>After vaccine**</b>
<b>Amantadine</b>	3-5 days*	7 days	Until outbreak over	2 weeks
<b>Rimantadine</b>				
<b>Oseltamivir</b>	5 days	7 days	Until outbreak over	2 weeks
<b>Zanamivir</b>		N/A	N/A	N/A

\*Until afebrile 1-2 days \*\* If antiviral prophylaxis is desired for high-risk individuals during the time immunity is developing

### **Pediatric Points**

- Children  $\leq 9$  years old who have never had an influenza vaccine need 2 doses of influenza vaccine,  $\geq 1$  month apart to be optimally protected. Therefore, if a high-risk child is vaccinated when there is influenza in the community, antiviral prophylaxis may need to be continued for 6 weeks for optimal protection.
- For pediatric antiviral use where no liquid formulation is available, open the capsule or crush the tablet, and give the appropriate dose in cherry syrup.

### **ANTIVIRAL MEDICINES**

#### **Amantadine** [100 mg capsule; 50 mg/5 ml syrup]

- Treatment and prophylaxis (T&P) of influenza A in  $\geq 12$  months of age.
- Standard dose in adults for both T&P: 100 mg PO twice a day.
- Standard dose in children for T&P: 5 mg/kg/day PO in two divided doses (max of 150 mg/day).
- Side effects: CNS effects (e.g. trouble concentrating, insomnia & lowered seizure threshold, dry mouth, urinary retention).
- Decrease dose to 100 mg Q day
  - CrCl  $\leq 50$  ml/min
  - Age  $\geq 65$  years
  - When side effects occur on 100 mg BID

#### **Rimantadine** [100 mg tablet; 50 mg/5 ml syrup]

- Treatment of influenza A in  $\geq 13$  y.o.
- Prophylaxis of influenza A in  $\geq 1$  y.o.
- Standard dose in adults: 100 mg PO twice a day (see above table for length)
- Standard dose in children: 5 mg/kg/day PO in two divided doses (max of 150 mg/day).
- Similar but fewer side effects than amantadine
- Decrease dose to 100 mg Q day
  - Nursing home residents
  - Age  $\geq 65$  years
  - Severe hepatic dysfunction
  - CrCl  $\leq 10$  ml/min
  - When side effects occur on 100 mg BID

#### **Oseltamivir (Tamiflu®)** [75 mg tablet; 60 mg/5 ml suspension]

- Treatment and prophylaxis of influenza A & B in  $\geq 12$  months old.
- Treatment: 75 mg PO **twice daily** for 5 days.
- Lower dose in children based on weight:
  - $\leq 15$  kg, 30 mg BID;
  - $>15$ -23 kg, 45 mg BID;
  - $>23$ -40 kg, 60 mg BID;
  - $>40$  kg, 75 mg PO BID.
- Prophylaxis: 75 mg PO **once daily**
- Side effects: nausea & vomiting
- Reduce dose to 75 mg every other day when CrCl 10-30 ml/min

#### **Zanamivir (Relenza®)** [Inhaler]

- Treatment of influenza A & B in  $\geq 7$  years of age.
- Inhalation (10 mg) twice daily for 5 days.
- Side effects: Bronchospasm

### **For more detailed information about each antiviral medication**

See <http://www.cdc.gov/flu/professionals/treatment>